

	ATGAAATTTA GTAAAAATA ATATAGCAGCT GGATCAGCTG TTATCGTATC CTGAGTCTA	60
	TGTGCCTATG CACTAAACCA GCATCGTTTCG CAGGAAAATA AGGACAATAA TCGTGTCTCT	120
	TATGTGGATG GCAGCCAGTC AAGTCAGAAA AGTGAAAAC TACACCAGA CCAGGTTAGC	180
	CAGAAAGAAG GAATTCAGGC TGAGCAAATT GTAATCAAAA TTACAGATCA GGCCTATGTA	240
5	ACGTCACACG GTGACCACTA TCATTACTAT AATGGGAAAAG TTCCTTATGA TGCCCTCTTT	300
	AGTGAAGAAC TCTTGATGAA GGATCCAAAC TATCAACTTA AAGACGCTGA TATTGTCAAT	360
	GAAGTCAAGG GTGGTTATAT CATCAAGGTC GATGGAAAAT ATTATGTCTA CCTGAAAGAT	420
	GCAGCTCATG CTGATAATGT TCGAACTAAA GATGAAATCA ATCGTCAAAA ACAAGAACAT	480
	GTCAAAGATA ATGAGAAGGT TAACTCTAAT GTTGCTGTAG CAAGGTCTCA GGGACGATAT	540
10	ACGACAAATG ATGGTTATGT CTTTAATCCA GCTGATATTA TCGAAGATAC GGGTAATGCT	600
	TATATCGTTC CTCATGGAGG TCACTATCAC TACATTCCCA AAAGCGATTT ATCTGCTAGT	660
	GAATTAGCAG CAGCTAAAGC ACATCTGGCT GGAAAAATA TGCAACCGAG TCAGTTAAGC	720
	TATTCTTCAA CAGCTAGTGA CAATAACACG CAATCTGTAG CAAAAGGATC AACTAGCAAG	780
	CCAGCAAATA AATCTGAAAA TCTCCAGAGT CTTTGAAGG AACTCTATGA TTCACCTAGC	840
15	GCCCAACGTT ACAGTGAATC AGATGGCCTG GTCTTTGACC CTGCTAAGAT TATCAGTCGT	900
	ACACCAAATG GAGTTGCGAT TCCGCATGGC GACCATTACC ACTTTATTCC TTACAGCAAG	960
	CTTCTGCTT TAGAAGAAAA GATTGCCAGA ATGGTGCCTA TCAGTGAAC TGGTCTTACA	1020
	GTTTCTACAA ATGCAAAACC TAATGAAGTA GTGTCTAGTC TAGGCAGTCT TTCAAGCAAT	1080
	CCTTCTTCTT TAACGACAAG TAAGGAGCTC TCTTCAGCAT CTGATGGTTA TATTTTAAAT	1140
	CCAAAAGATA TCGTTGAAGA AACGGCTACA GCTTATATTG TAAGACATGG TGATCATTTT	1200
	CATTACATTC CAAAATCAAA TCAAATTGGG CAACCGACTC TTCCAAACAA TAGTCTAGCA	1260
	ACACCTTCTC CATCTCTTCC AATCAATCCA GGAACCTCAC ATGAGAAACA TGAAGAAGAT	1320
	GGATACGGAT TTGATGCTAA TCGTATTATC GCTGAAGATG AATCAGGTTT TGTCATGAGT	1380
	CACGGAGACC ACAATCATT TTTCTTCAAG AAGGACTTGA CAGAAGAGCA AATTAAGGCT	1440
	GCGCAAAAAC ATTTAGAGGA AGTTAAACT AGTCATAATG GATTAGATTCT TTTGTCATCT	1500
	CATGAACAGG ATTATCCAGG TAATGCCAAA GAAATGAAAG ATTTAGATAA AAAAATCGAA	1560
	GAAAAAATTG CTGGCATTAT GAAACAATAT GGTGTCAAAC GTGAAAGTAT TGTCGTGAAT	1620
	AAAGAAAAAA ATGCGATTAT TTATCCGCAT GGAGATCACC ATCATGCAGA TCCGATTGAT	1680
	GAACATAAAC CGGTGGAAT TGGTCATTCT CACAGTAACT ATGAACTGTT TAAACCCGAA	1740
	GAAGGAGTTG CTAAAAAGA AGGGAATAAA GTTTATACTG GAGAAGAATT AACGAATGTT	1800
	GTTAATTTGT TAAAAATAG TACGTTTAAT AATCAAAACT TTACTCTAGC CAATGGTCAA	1860
	AAACGCGTTT CTTTGTAGTT TCCGCCTGAA TTGGAGAAAA AATTAGGTAT CAATATGCTA	1920
	GTAAATTTAA TAACACCAGA TGGAAAAGTA TTGGAGAAAG TATCTGGTAA AGTATTTGGA	1980
	GAAGGAGTAG GGAATATTGC AAACCTTGAA TTAGATCAAC CTTATTTACC AGGACAAACA	2040
35	TTTAAGTATA CTATCGCTTC AAAAGATTAT CCAGAAGTAA GTTATGATGG TACATTTACA	2100
	GTTCCAACCT CTTTAGCTTA CAAAATGGCC AGTCAAACGA TTTTCTATCC TTTCCATGCA	2160
	GGGGATACTT ATTTAAGAGT GAACCCTCAA TTTGCAGTGC CTAAAGGAAC TGATGCTTTA	2220
	GTCAGAGTGT TTGATGAATT TCATGGAAAT GCTTATTTAG AAAATAACTA TAAAGTTGGT	2280
	GAAATCAAAAT TACCGATTCC GAAATTAAAC CAAGGAACAA CCAGAACGGC CGGAAATAAA	2340
40	ATTCCTGTAA CCTTCATGGC AAATGCTTAT TTGGACAATC AATCGACTTA TATTGTGGAA	2400
	GTACCTATCT TGGAAAAAGA AAATCAAAC TATAAACCAA GTATTCTACC ACAATTTAA	2460
	AGGAATAAAG CACAAGAAAA CTCAAACTT GATGAAAAGG TAGAAGAACC AAAGACTAGT	2520
	GAGAAGGTAG AAAAAGAAAA ACTTCTGAA ACTGGGAATA GTACTAGTAA TTCAACGTTA	2580
	GAAGAAGTTC CTACAGTGGG TCCTGTACAA GAAAAGTAG CAAAATTTGC TGAAAGTTAT	2640
45	GGGATGAAGC TAGAAAATGT CTGTGTTAAT ATGGACGGAA CAATTGAATT ATATTTACCA	2700

TCAGGAGAAG TCATTAAAAA GAATATGGCA GATTTTACAG GAGAAGCACC TCAAGGAAAT	2760
GGTGAAAATA AACCATCTGA AAATGGAAAA GTATCTACTG GAACAGTTGA GAACCAACCA	2820
ACAGAAAATA AACCAGCAGA TTCTTTACCA GAGGCACCAA ACGAAAAACC TGTAACCA	2880
GAAAACTCAA CGGATAATGG AATGTTGAAT CCAGAAGGGA ATGTGGGGAG TGACCCTATG	2940
5 TTAGATCCAG CATTAGAGGA AGCTCCAGCA GTAGATCCTG TACAAGAAAA ATTAGAAAA	3000
TTTACAGCTA GTTACGGATT AGGCTTAGAT AGTGTATAT TCAATATGGA TGGACGATT	3060
GAATTAAGAT TGCCAAGTGG AGAAGTGATA AAAAAGAATT TATCTGATTT CATAGCGTAA	3120

(SEQ ID NO: 1)

FIGURE 1

10

AATTCCTTGT CGGGTAAGTT CCGACCCGCA CGAAAGGCGT AATGATTGG GCACGTCTC	60
AACGAGAGAC TCGGTGAAAT TTTAGTACCT GTGAAGATGC AGGTTACCCG CGACAGGACG	120
GAAAGACCCC ATGGAGCTTT ACTGCAGTTT GATATTGAGT GTCTGTACCA CATGTACAGG	180
15 ATAGGTAGGA GTCTAAGAGA TCGGGACGCC AGTTTCGAAG GAGACGCTGT TGGGATACTA	240
CCCTTGTGTT ATGGCCACTC TAACCCAGAT AGGTGATCCC TATCGGAGAC AGTGTCTGAC	300
GGGCAGTTTG ACTGGGGCGG TCGCCTCCTA AAAGGTAACG GAGGCGCCCA AAGGTTCCCT	360
CAGAATGGTT GGAAATCATT CGCAGAGTGT AAAGGTATAA GGGAGCTTGA CTGCGAGAGC	420
TACAACTCGA GCAGGGACGA AAGTCGGGCT TAGTGATCCG GTGGTTCCGT ATGGAAGGGC	480
20 CATCGCTCAA CGGATAAAG CTACCCTGGG GATAACAGGC TTATCTCCCC CAAGAGTTCA	540
CATCGACGGG GAGGTTTGGC ACCTCGATGT CGGCTCGTCG CATCTGGGG CTGTAGTCGG	600
TCCCAAGGGT TGGGCTGTTT GCCCATTAAG CCGGCACGCG AGCTGGGTTT AGAACGTCGT	660
GAGACAGTTC GGTCCCTATC CGTCGCGGGC GTAGGAAATT TGAGAGGATC TGCTCCTAGT	720
ACGAGAGGAC CAGAGTGGAC TTACCCTGGT TGTACCAGTT GTCTTGCCAA AGGCATCGCT	780
25 GGGTAGCTAT GTAGGGAAGG GATAAACGCT GAAAGCATCT AAGTGTGAAA CCCACCTCAA	840
GATGAGATTT CCCATGATTA TATATCAGTA AGAGCCCTGA GAGATGATCA GGTAGATAGG	900
TTAGAAGTGG AAGTGTGGCG ACACATGTAG CGGACTAATA CTAATAGCTC GAGGACTTAT	960
CCAAAGTAAC TGAGAATATG AAAGCGAACG GTTTTCTTAA ATTGAATAGA TATTCAATTT	1020
30 TGAGTAGGTA TTAATCAGAG TTAAGTGACG ATAGCCTAGG AGATACACCT GTACCCATGC	1080
CGAACACAGA AGTTAAGCCC TAGAACGCCG GAAGTAGTTG GGGGTTGCCC CCTGTGAGAT	1140
AGGGAAGTCG CTTAGCTCTA GGGAGTTTAG CTCAGCTGGG AGAGCATCTG CCTTACAAGC	1200
AGAGGGTCAG CGGTTTCATC CCGTTAACTC CCAAAGGTCC CGTAGTGTAG CGGTTATCAC	1260
GTCGCCCTGT CACGGCGAAG ATCGCGGGTT CGATTCCCGT CGGGACCGTT TAAGGTAACG	1320
CAAGTTATTT TAGACTCGTT AGCTCAGTTG GTAGAGCAAT TGACTTTTAA TCAATGGGTC	1380
35 ACTGGTTCGA GCCCAGTACG GGTCATATAT GCGGGTTTGG CGGAATTCTA ATCTCTTTGA	1440
AATCATCTTC TCTCACTTTC CAAAACCTCTA TTACCTCTTA TTATACCACA TTTCAATCTT	1500
CAACTTCCCC GTAATATAAG CACCTCTGGC GAAAGAAGTT TCAATGTCCT AAAGTAATAA	1560
GTGAATCCAA TTCAGGAACT CCAAGAACAA AAGAAACATC TGGTGTACA AGTATTGGAT	1620
GGCACAGAGT CACGTGGTAG TCTGACCTTA GCAGAAATTT TAAATAGTAA ACTATTTACT	1680
40 GGTTAATTA ATGGTTAAAT AACCAGTTTA GAAACTATT TAATAAAGTA AAAGAAGTTG	1740
AGAAAAACT TCATCATTTA TTGAAATGAG GGATTTATGA AATTTAGTAA AAAATATATA	1800
GCAGCTGGAT CAGCTGTTAT CGTATCCTTG AGTCTATGTG CCTATGCACT AAACCAGCAT	1860
CGTTCGCAGG AAAATAAGGA CAATAATCGT GTCTCTTATG TGGATGGCAG CCAGTCAAGT	1920
CAGAAAAGTG AAAACTTGAC ACCAGACCAG GTTAGCCAGA AAGAAGGAAT TCAGGCTGAG	1980
45 CAAATTGTAA TCAAAATTAC AGATCAGGGC TATGTAACGT CACACGGTGA CCACTATCAT	2040

	TACTATAATG	GGAAAGTTCC	TTATGATGCC	CTCTTTAGTG	AAGAACTCTT	GATGAAGGAT	2100
	CCAAACTATC	AACTTAAAGA	CGCTGATATT	GTCAATGAAG	TCAAGGGTGG	TTATATCATC	2160
	AAGGTCGATG	GAAAATATTA	TGTCTACCTG	AAAGATGCAG	CTCATGCTGA	TAATGTTTCGA	2220
	ACTAAAGATG	AAATCAATCG	TCAAAAACAA	GAACATGTCA	AAGATAATGA	GAAGGTTAAC	2280
5	TCTAATGTTG	CTGTAGCAAG	GTCTCAGGGA	CGATATACGA	CAAATGATGG	TTATGTCCTT	2340
	AATCCAGCTG	ATATTATCGA	AGATACGGGT	AATGCTTATA	TCGTTCTCTA	TGGAGGTCAC	2400
	TATCACTACA	TTCCCAAAAG	CGATTTATCT	GCTAGTGAAT	TAGCAGCAGC	TAAAGCACAT	2460
	CTGGCTGGAA	AAAATATGCA	ACCGAGTCAG	TTAAGCTATT	CTTCAACAGC	TAGTGACAAT	2520
	AACACGCAAT	CTGTAGCAAA	AGGATCAACT	AGCAAGCCAG	CAAATAAATC	TGAAAATCTC	2580
10	CAGAGTCTTT	TGAAGGAACT	CTATGATTCA	CCTAGCGCCC	AACGTTACAG	TGAATCAGAT	2640
	CGCCTGGTCT	TTGACCCTGC	TAAGATTATC	AGTCGTACAC	CAAATGGAGT	TGCGATTCCG	2700
	CATGGCGACC	ATTACCACTT	TATTCCTTAC	AGCAAGCTTT	CTGCTTTAGA	AGAAAAGATT	2760
	GCCAGAATGG	TGCCTATCAG	TGGAACGGT	TCTACAGTTT	CTACAAATGC	AAAACCTAAT	2820
	GAAGTAGTGT	CTAGTCTAGG	CAGTCTTTCA	AGCAATCCTT	CTTCTTTAAC	GACAAGTAAG	2880
15	GAGCTCTCTT	CAGCATCTGA	TGGTTATATT	TTTAATCCAA	AAGATATCGT	TGAAGAAACG	2940
	GCTACAGCTT	ATATTGTAAG	ACATGGTGAT	CATTTCATT	ACATTCCAAA	ATCAAATCAA	3000
	ATTGGGCAAC	CGACTCTTCC	AAACAATAGT	CTAGCAACAC	CTTCTCCATC	TCTTCCAATC	3060
	AATCCAGGAA	CTTCACATGA	GAAACATGAA	GAAGATGGAT	ACGGATTTGA	TGCTAATCGT	3120
	ATTATCGCTG	AAGATGAATC	AGGTTTTGTC	ATGAGTCACG	GAGACCACAA	TCATTATTTT	3180
20	TTCAAGAAGG	ACTTGACAGA	AGAGCAAATT	AAGGCTGCGC	AAAAACATTT	AGAGGAAGTT	3240
	AAAAGTAGTC	ATAATGGATT	AGATTCTTTG	TCATCTCATG	AACAGGATTA	TCCAGGTAAT	3300
	GCCAAAGAAA	TGAAAGATTT	AGATAAAAAA	ATCGAAGAAA	AAATTGCTGG	CATTATGAAA	3360
	CAATATGGTG	TCAAACGTGA	AAGTATTGTC	GTGAATAAAG	AAAAAAATGC	GATTATTTAT	3420
	CCGCATGGAG	ATCACCATCA	TGCAGATCCG	ATTGATGAAC	ATAAACCGGT	TGGAATTGGT	3480
25	CATTCTCACA	GTAACATATG	ACTGTTTAAA	CCCGAAGAAG	GAGTTGCTAA	AAAAGAAGGG	3540
	AATAAAGTTT	ATACTGGAGA	AGAATTAACG	AATGTTGTTA	ATTTGTTAAA	AAATAGTACG	3600
	TTTAATAATC	AAAACTTTAC	TCTAGCCAAT	GGTCAAAAAC	GCGTTTCTTT	TAGTTTTCCTG	3660
	CCTGAATTGG	AGAAAAAATT	AGGTATCAAT	ATGCTAGTAA	AATTAATAAC	ACCAGATGGA	3720
	AAAGTATTGG	AGAAAGTATC	TGGTAAAGTA	TTTGAGAGAAG	GAGTAGGGAA	TATTGCAAAAC	3780
30	TTTGAATTAG	ATCAACCTTA	TTTACCAGGA	CAAACATTTA	AGTATACTAT	CGCTTCAAAA	3840
	GATTATCCAG	AAGTAAGTTA	TGATGGTACA	TTTACAGTTC	CAACCTCTTT	AGCTTACAAA	3900
	ATGGCCAGTC	AAACGATTTT	CTATCCTTTC	CATGCAGGGG	ATACTTATTT	AAGAGTGAAC	3960
	CCTCAATTTG	CAGTGCCATA	AGGAACATGAT	GCTTTAGTCA	GAGTGTGTTGA	TGAATTTTCAT	4020
	GGAAATGCTT	ATTTAGAAAA	TAACTATAAA	GTTGGTGAAA	TCAAATTACC	GATTCCGAAA	4080
35	TTAAACCAAG	GAACAACCAG	AACGGCCGGA	AATAAAATTC	CTGTAACCTT	CATGGCAAAT	4140
	GCTTATTTGG	ACAATCAATC	GACTTATATT	GTGGAAGTAC	CTATCTTGGA	AAAAGAAAAT	4200
	CAAACCTGATA	AACCAAGTAT	TCTACCACAA	TTTAAAAGGA	ATAAAGCACA	AGAAAACCTCA	4260
	AAACTTGATG	AAAAGGTAGA	AGAACCRAAG	ACTAGTGAGA	AGGTAGAAAA	AGAAAACTTT	4320
	TCTGAAACTG	GGAATAGTAC	TAGTAATTCA	ACGTTAGAAG	AAGTTCCTAC	AGTGGATCCT	4380
40	GTACAAGAAA	AAGTAGCAAA	ATTTGCTGAA	AGTTATGGGA	TGAAGCTAGA	AAATGTCCTG	4440
	TTTAATATGG	ACGGAACAAT	TGAATTATAT	TTACCATCAG	GAGAAGTCAT	TAAAAAGAAT	4500
	ATGGCAGATT	TTACAGGAGA	AGCACCTCAA	GGAAATCGTG	AAAATAAACC	ATCTGAAAAT	4560
	GGAAAAGTAT	CTACTGGAAC	AGTTGAGAAC	CAACCAACAG	AAAATAAACC	AGCAGATTCT	4620
	TTACCAGAGG	CACCAAACGA	AAAACCTGTA	AAACCAGAAA	ACTCAACGGA	TAATGGAATG	4680
45	TTGAATCCAG	AAGGGAATGT	GGGGAGTGAC	CCTATGTTAG	ATCCAGCATT	AGAGGAAGCT	4740

CCAGCAGTAG ATCCTGTACA AAAAAATTA GAAAAATTTA CAGCTAGTTA CGGATTAGGC 4800
 TTAGATAGTG TTATATTCAA TATGGATGGA ACGATTGAAT TAAGATTGCC AAGTGGAGAA 4860
 GTGATAAAAA AGAATTTATC TGATTTTCATA GCGTAAGGAA TAGCAGTAGA AAAAGTCTGA 4920
 ATCAAAAATG AAGTTCTCTC AAAAGTTAGA AATAAACTC TGACTTTGGG AGAATTTTCAT 4980
 5 TTTATTATTA ATATATAAAA TTTCTTGACA TACAACCTAA AAAGAGGTGG AATATTTACT 5040
 AGTTAATT (SEQ ID NO : 2) 5048

FIGURE 2

10 ATGAAAATCA ATAAAAATA TCTAGCTGGG TCAGTAGCTA CACTTGTTTT AAGTGTCTGT 60
 GCTTATGAAC TAGGTTTGCA TCAAGCTCAA ACTGTAAAAG AAAATAATCG TGTTTCCTAT 120
 ATAGATGGAA AACACGCGAC GCAAAAAACG GAGAATTTGA CTCCTGATGA GGTTAGCAAG 180
 CGTGAAGGAA TCAACGCCGA ACAAATCGTC ATCAAGATTA CGGATCAAGG TTATGTGACC 240
 TCTCATGGAG ACCATTATCA TTACTATAAT GGCAAGGTCC CTTATGATGC CATCATCAGT 300
 15 GAAGAGCTCC TCATGAAAGA TCCGAATTAT CAGTTGAAGG ATTCAGACAT TGTCAATGAA 360
 ATCAAGGGTG GTTATGTCAT TAAGGTAAAC GGTAAATACT ATGTTTACCT TAAGGATGCA 420
 GCTCATGCGG ATAATGTCCG TACAAAAGAA GAAATCAATC GGCAAAAACA AGAACATAGT 480
 CAGCATCGTG AAGGAGGGAC TTCAGCAAAC GATGGTGCGG TAGCCTTTGC ACGTTCACAG 540
 GGACGCTACA CCACAGATGA TGGTTATATC TTCAATGCAT CTGATATCAT CGAAGATACG 600
 20 GGCGATGCCT ATATCGTTCC TCATGGAGAT CATTACCATT ACATTCCTAA GAATGAGTTA 660
 TCAGCTAGCG AGTTGGCTGC TGCAGAAGCC TTCCTATCTG GTCGGGAAAA TCTGTCAAAT 720
 TTAAGAACCCT ATCGCCGACA AAATAGCGAT AACACTCCAA GAACAAACTG GGTACCTTCT 780
 GTAAGCAATC CAGGAACCTAC AAATACTAAC ACAAGCAACA ACAGCAACAC TAACAGTCAA 840
 GCAAGTCAAA GTAATGACAT TGATAGTCTC TTGAAACAGC TCTACAACT GCCTTTGAGT 900
 25 CAACGCCATG TAGAATCTGA TGGCCTTATT TTCGACCCAG CGCAAATCAC AAGTCGAACC 960
 GCCAGAGGTG TAGCTGTCCC TCATGGTAAC CATTACCACT TTATCCCTTA TGAACAAATG 1020
 TCTGAATTGG AAAAACGAAT TGCTCGTATT ATTCCCCTTC GTTATCGTTC AAACCATTGG 1080
 GTACCAGATT CAAGACCAGA AGAACCAAGT CCACAACCGA CTCCAGAACC TAGTCCAAGT 1140
 CCGCAACCTG CACCAAATCC TCAACCAGCT CCAAGCAATC CAATTGATGA GAAATTGGTC 1200
 30 AAAGAAGCTG TTCGAAAAGT AGGCGATGGT TATGTCTTTG AGGAGAATGG AGTTTCTCGT 1260
 TATATCCCAG CCAAGAATCT TTCAGCAGAA ACAGCAGCAG GCATTGATAG CAACTGGGCC 1320
 AAGCAGGAAA GTTTATCTCA TAAGCTAGGA GCTAAGAAAA CTGACCTCCC ATCTAGTGAT 1380
 CGAGAATTTT ACAATAAGGC TTATGACTTA CTAGCAAGAA TTCACCAAGA TTTACTTGAT 1440
 AATAAAGGTC GACAAGTTGA TTTTGAGGCT TTGGATAACC TGTGGAACG ACTCAAGGAT 1500
 35 GTCTCAAGTG ATAAAGTCAA GTTAGTGGAT GATATTCTTG CCTTCTTAGC TCCGATTCTG 1560
 CATCCAGAAC GTTTAGGAAA ACCAATGCG CAAATTACCT AACTGATGA TGAGATTCAA 1620
 GTAGCCAAGT TGGCAGGCAA GTACACAACA GAAGACGGTT ATATCTTTGA TCCTCGTGAT 1680
 ATAACCAGTG ATGAGGGGGA TGCCTATGTA ACTCCACATA TGACCCATAG CCACTGGATT 1740
 AAAAAAGATA GTTTGTCTGA AGCTGAGAGA GCGGCAGCCC AGGCTTATGC TAAAGAGAAA 1800
 40 GGTTTGACCC CTCCTTCGAC AGACCATCAG GATTCAAGAA ATACTGAGGC AAAAGGAGCA 1860
 GAAGCTATCT ACAACCGCGT GAAAGCAGCT AAGAAGGTGC CACTTGATCG TATGCCTTAC 1920
 AATCTTCAAT ATACTGTAGA AGTCAAAAAC GGTAGTTTAA TCATACCTCA TTATGACCAT 1980
 TACCATAACA TCAAATTTGA GTGGTTTGAC GAAGGCCTTT ATGAGGCACC TAAGGGGTAT 2040
 ACTCTTGAGG ATCTTTTGGC GACTGTCAAG TACTATGTCG AACATCCAAA CGAACGTCCG 2100
 45 CATTAGATA ATGGTTTTGG TAACGCTAGC GACCATGTTT AAAGAAACAA AATGGTCAA 2160

GCTGATACCA ATCAAACGGA AAAACCAAGC GAGGAGAAAC CTCAGACAGA AAAACCTGAG	2220
GAAGAAACCC CTCGAGAAGA GAAACCACAA AGCGAGAAAC CAGAGTCTCC AAAACCAACA	2280
GAGGAACCAG AAGAAGAATC ACCAGAGGAA TCAGAAGAAC CTCAGGTCTGA GACTGAAAAG	2340
GTTGAAGAAA AACTGAGAGA GGCTGAAGAT TTAAGTGGAA AAATCCAGGA TCCAATTATC	2400
AAGTCCAATG CCAAAGAGAC TCTCACAGGA TTAAGAAATA ATTTACTATT TGGCACCCAG	2460
GACAACAATA CTATTATGGC AGAAGCTGAA AAAGTATTGG CTTTATTAAA GGAGAGTAAG	2520
TAA (SEQ ID NO: 3)	2523

FIGURE 3

10	CAGAGATCTT AGTGAATCAA ATATACTTAA GAAAAGAGGA AAGAATGAAA ATCAATAAAA	60
	AATATCTAGC TGGGTCAGTA GCTACACTTG TTTAAGTGT CTGTGCTTAT GAACTAGGTT	120
	TGCATCAAGC TCAAAGTGA AAAGAAAATA ATCGTGTTC CTATATAGAT GGAAAACAAG	180
15	CGACGCAAAA AACGGAGAAT TTGACTCCTG ATGAGGTTAG CAAGCGTGAA GGAATCAACG	240
	CCGAACAAAT CGTCATCAAG ATTACGGATC AAGGTTATGT GACCTCTCAT GGAGACCATT	300
	ATCATTACTA TAATGGCAAG GTCCCTTATG ATGCCATCAT CAGTGAAGAG CTCCTCATGA	360
	AAGATCCGAA TTATCAGTTG AAGGATTCAG ACATTGTCAA TGAAATCAAG GGTGGTTATG	420
	TCATTAAGGT AAACGGTAAA TACTATGTTT ACCTTAAGGA TGCAGCTCAT GCGGATAATG	480
20	TCCGTACAAA AGAAGAAATC AATCGGCAAA AACAAGAACA TAGTCAGCAT CGTGAAGGAG	540
	GGACTTCAGC AAACGATGGT GCGGTAGCCT TTGCACGTTT ACAGGGACGC TACACCACAG	600
	ATGATGGTTA TATCTTCAAT GCATCTGATA TCATCGAAGA TACGGGCGAT GCCTATATCG	660
	TTCTCATGG AGATCATTAC CATTACATTC CTAAGAATGA GTTATCAGCT AGCGAGTTGG	720
	CTGCTGCAGA AGCCTTCCTA TCTGGTCGGG AAAATCTGTC AAATTTAAGA ACCTATCGCC	780
	GACAAAATAG CGATAACACT CCAAGAACAA ACTGGGTACC TTCTGTAAGC AATCCAGGAA	840
25	CTACAAATAC TAACACAAGC AACAACAGCA AACTAACAG TCAAGCAAGT CAAAGTAATG	900
	ACATTGATAG TCTCTTGAAA CAGCTCTACA AACTGCCTTT GAGTCAACGC CATGTAGAAT	960
	CTGATGGCCT TATTTTCGAC CCAGCGCAAA TCACAAGTCG AACC GCCAGA GGTGTAGCTG	1020
	TCCCTCATGG TAACCATTAC CACTTTATCC CTTATGAACA AATGTCTGAA TTGGAAAAAC	1080
30	GAATTGCTCG TATTATCCC CTTGTTATC GTTCAAACCA TTGGGTACCA GATTCAAGAC	1140
	CAGAAGAACC AAGTCCACAA CCGACTCCAG AACCTAGTCC AAGTCCGCAA CCTGCACCAA	1200
	ATCCTCAACC AGCTCCAAGC AATCCAATTG ATGAGAAATT GGTCAAAGAA GCTGTTCGAA	1260
	AAGTAGGCGA TGGTTATGTC TTTGAGGAGA ATGGAGTTTC TCGTTATATC CCAGCCAAGA	1320
	ATCTTTCAGC AGAAACAGCA GCAGGCATTG ATAGCAAACCT GGCCAAGCAG GAAAGTTTAT	1380
35	CTCATAAGCT AGGAGCTAAG AAAACTGACC TCCCATCTAG TGATCGAGAA TTTTACAATA	1440
	AGGCTTATGA CTTACTAGCA AGAATTCACC AAGATTTACT TGATAATAAA GGTGACAAG	1500
	TTGATTTTGA GGCTTTGGAT AACCTGTTGG AACGACTCAA GGATGTCTCA AGTGATAAAG	1560
	TCAAGTTAGT GGATGATATT CTTGCCTTCT TAGCTCCGAT TCGTCATCCA GAACGTTTAG	1620
	GAAAACCAAA TGCACAAATT ACCTACACTG ATGATGAGAT TCAAGTAGCC AAGTTGGCAG	1680
40	GCAAGTACAC AACAGAAGAC GGTATATCT TTGATCCTCG TGATATAACC AGTGATGAGG	1740
	GGGATGCCTA TGTAAGTCCA CATATGACCC ATAGCCACTG GATTAAAAAA GATAGTTTGT	1800
	CTGAAGCTGA GAGAGCGGCA GCCCAGGCTT ATGCTAAAGA GAAAGGTTTG ACCCTCCTT	1860
	CGACAGACCA TCAGGATTCA GGAAATACTG AGGCAAAAGG AGCAGAAGCT ATCTACAACC	1920
	GCGTGAAAGC AGCTAAGAAG GTGCCACTTG ATCGTATGCC TTACAATCTT CAATATACTG	1980
	TAGAAGTCAA AAACGGTAGT TTAATCATAC CTCATTATGA CCATTACCAT AACATCAAAT	2040
45	TTGAGTGGTT TGACGAAGGC CTTTATGAGG CACCTAAGGG GTATACTCTT GAGGATCTTT	2100

	TGGCGACTGT CAAGTACTAT GTCGAACATC CAAACGAACG TCCGCATTCA GATAATGGTT	2160
	TTGGTAACGC TAGCGACCAT GTTCAAAGAA ACAAATGG TCAAGCTGAT ACCAATCAAA	2220
	CGGAAAAACC AAGCGAGGAG AAACCTCAGA CAGAAAAACC TGAGGAAGAA ACCCCTCGAG	2280
	AAGAGAAACC ACAAAGCGAG AAACCAGAGT CTCCAAACC AACAGAGGAA CCAGAAGAAG	2340
5	AATCACCAGA GGAATCAGAA GAACCTCAGG TCGAGACTGA AAAGGTTGAA GAAAACTGA	2400
	GAGAGGCTGA AGATTTACTT GGAAAAATCC AGGATCCAAT TATCAAGTCC AATGCCAAAG	2460
	AGACTCTCAC AGGATTAAAA AATAATTTAC TATTTGGCAC CCAGGACAAC AATACTATTA	2520
	TGGCAGAAGC TGAAAACTA TTGGCTTTAT TAAAGGAGAG TAAGTAAAGC TAGCAGCATT	2580
	TTCTAACTCC TAAAAACAGG ATAGGAGAAC GGGAAAACGA AAAATGAGAG CAGAATGTGA	2640
10	GTTCTAG (SED ID NO : 4)	2647
	FIGURE 4	

	GGGTCTTAAA ACTCTGAATC CTTTAGAGGC AGACCCACAA AATGACAAGA CCTATTTAGA	60
15	AAATCTGGAA GAAAAATATGA GTGTTCTAGC AGAAGAATTA AAGTGAGCAA AGAATGAAAA	120
	TCAATAAAAA ATATCTAGCA GGTTCAGTGG CAGTCCTTGC CCTAAGTGTT TGTTCTTATG	180
	AACCTGGTCG TCACCAAGCT GGTTCAGGTTA AGAAAGAGTC TAATCGAGTT TCTTATATAG	240
	ATGGTGATCA GGCTGGTCAA AAGGCAGAAA ATTTGACACC AGATGAAGTC AGTAAGAGAG	300
	AGGGGATCAA CGCCGAACAA ATTGTTATCA AGATTACGGA TCAAGGTTAT GTGACCTCTC	360
	ATGGAGACCA TTATCATTAC TATAATGGCA AGGTTCTTGA TGATGCCATC ATCAGTGAAG	420
	AACCTTCTCAT GAAAGATCCG AATTATCAGT TGAAGGATTC AGACATTGTC AATGAAATCA	480
	AGGGTGGCTA TGTGATTAAG GTAGACGGAA AATACTATGT TTACCTTAAA GATGCGGCCC	540
	ATGCGGACAA TATTCGGACA AAAGAAGAGA TTAAACGTCA GAAGCAGGAA CACAGTCATA	600
	ATCATAACTC AAGAGCAGAT AATGCTGTTG CTGCAGCCAG AGCCCAAGGA CGTTATACAA	660
	CGGATGATGG GTATATCTTC AATGCATCTG ATATCATGTA GGACACGGGT GATGCTTATA	720
	TCGTTCTCTCA CGGCGACCAT TACCATTACA TTCCTAAGAA TGAGTTATCA GCTAGCGAGT	780
	TAGCTGCTGC AGAAGCCTAT TGGAAATGGGA AGCAGGGATC TCGTCCTTCT TCAAGTTCTA	840
	GTTATAATGC AAATCCAGTT CAACCAAGAT TGTCAGAGAA CCACAATCTG ACTGTCACTC	900
	CAACTTATCA TCAAAATCAA GGGGAAAACA TTTCAAGCCT TTTACGTGAA TTGTATGCTA	960
30	AACCTTATC AGAACGCCAT GTAGAATCTG ATGGCCTTAT TTTCGACCCA GCGCAAATCA	1020
	CAAGTCGAAC CGCCAGAGGT GTAGCTGTCC CTCATGGTAA CCATTACCAC TTTATCCCTT	1080
	ATGAACAAAT GTCTGAATTG GAAAAACGAA TTGCTCGTAT TATTCCCCTT CGTTATCGTT	1140
	CAAACCATTG GGTACCAGAT TCAAGACCAG AACAAACCAAG TCCACAATCG ACTCCGGAAC	1200
35	CTAGTCCAAG TCTGCAACCT GCACCAAATC CTCAACCAGC TCCAAGCAAT CCAATTGATG	1260
	AGAAATTGGT CAAAGAAGCT GTTCGAAAAG TAGGCGATGG TTATGTCTTT GAGGAGAATG	1320
	GAGTTTCTCG TTATATCCCA GCCAAGGATC TTTCAGCAGA AACAGCAGCA GGCATTGATA	1380
	GCAAACTGGC CAAGCAGGAA AGTTTATCTC ATAAGCTAGG AGCTAAGAAA ACTGACCTCC	1440
	CATCTAGTGA TCGAGAATTT TACAATAAGG CTTATGACTT ACTAGCAAGA ATTCACCAAG	1500
	ATTTACTTGA TAATAAAGGT CGACAAGTTG ATTTTGAGGT TTTGGATAAC CTGTTGGAAC	1560
40	GACTCAAGGA TGTCTCAAGT GATAAAGTCA AGTTAGTGGG TGATATTCTT GCCTTCTTAG	1620
	CTCCGATTCTG TCATCCAGAA CGTTTAGGAA AACCAAATGC GCAAATTACC TAACTGATG	1680
	ATGAGATTCA AGTAGCCAAG TTGGCAGGCA AGTACACAAC AGAAGACGGT TATATCTTTG	1740
	ATCCTCGTGA TATAACCAGT GATGAGGGGG ATGCCTATGT AACTCCACAT ATGACCCATA	1800
	GCCACTGGAT TAAAAAGAT AGTTTGTCTG AAGCTGAGAG AGCGGCAGCC CAGGCTTATG	1860
45	CTAAAGAGAA AGGTTTGACC CCTCCTTCGA CAGACCACCA GGATTCAGGA AATACTGAGG	1920

	CAAAAGGAGC AGAAGCTATC TACAACCGCG TGAAAGCAGC TAAGAAGGTG CCACTTGATC	1980
	GTATGCCTTA CAATCTTCAA TATACTGTAG AAGTCAAAA CGGTAGTTTA ATCATACCTC	2040
	ATTATGACCA TTACCATAAC ATCAAATTTG AGTGGTTTGA CGAAGGCCTT TATGAGGCAC	2100
	CTAAGGGGTA TAGTCTTGAG GATCTTTTGG CCACTGTCAA GTACTATGTC GAACATCCAA	2160
5	ACGAACGTCC GCATTGAGAT AATGGTTTTG GTAACGCTAG TGACCATGTT CGTAAAAATA	2220
	AGGCAGACCA AGATAGTAAA CCTGATGAAG ATAAGGAACA TGATGAAGTA AGTGAGCCAA	2280
	CTCACCTGA ATCTGATGAA AAAGAGAATC ACGCTGGTTT AAATCCTTCA GCAGATAATC	2340
	TTTATAAACC AAGCACTGAT ACGGAAGAGA CAGAGGAAGA AGCTGAAGAT ACCACAGATG	2400
	AGGCTGAAAT TCCTCAAGTA GAGAATTCTG TTATTAACGC TAAGATAGCA GATGCCGAGG	2460
10	CCTTGCTAGA AAAAGTAACA GATCCTAGTA TTAGACAAA TGCTATGGAG ACATTGACTG	2520
	GTCTAAAAAG TAGTCTTCTT CTCGGAACGA AAGATAATAA CACTATTTC A GCAGAAGTAG	2580
	ATAGTCTCTT GGCTTTGTTA AAAGAAAGTC AACCGGCTCC TATACAGTAG TAAATGAA	2639

(SEQ ID NO : 5)

FIGURE 5

15

	MKFSKKYIAA GSAVIVSLSL CAYALNQHRS QENKDNRRVS YVDGSQSSQK	50
	SENLTDPQVS QKEGIQAEQI VIKITDQGYV TSHGDHYHYH NGKVPYDALF	100
	SEELLMKDPN YQLKDADIVN EVKGGYIIKV DGKYYVYLKD AAHADNVRTK	150
	DEINRQKQEH VKDNEKVNSN VAVARSQGRY TTNDGYVFNP ADIIEDTGNA	200
	YIVPHGGHYH YIPKSDLAS ELAAAKAHLA GKNMQPSQLS YSSTASDNNT	250
	QSVAKGSTSK PANKSENLOS LLKELYDSPS AQRYSSEDGL VFDPAKIISR	300
	TPNGVAIPHG DHYHFIPYSK LSALEEKIAR MVPISGTGST VSTNAKPNEV	350
	VSSLGSLSSN PSSLTTSKEL SSASDGYIFN PKDIVEETAT AYIVRHGDHF	400
	HYIPKSNQIG QPTLPNNSLA TPSPSLPINP GTSHEKHEED GYGFDANRII	450
	AEDESGFVMS HGDHNNHYFFK KDLTEEQIKA AQKHLEEVKT SHNGLDSLSS	500
	HEQDYPGNAK EMKDLDDKIE EKIAGIMKQY GVKRESIVVN KEKNAIIPPH	550
	GDHHHADPID EHHPVGIGHS HSNYELFKPE EGVAKKEGNK VYTGEELTNV	600
	VNLLKNSTFN NQNFTELANGQ KRVSFSFPPE LEKKLGINML VKLITPDGKV	650
	LEKVSQKQVFC EGVGNIANFE LDQPYLPGQT FKYTIASKDY PEVSYDGTFT	700
	VPTSLAYKMA SQTIFYPFHA GDTYLRVNPQ FAVPKGTDAL VRVFDEFHGN	750
	AYLENNYKVG EIKLPIPKLN QGTTRTAGNK IPVTFMANAY LDNQSTYIVE	800
	VPILEKENQT DKPSILPOFK RNKAQENSKL DEKVEEPKTS EKVEKEKLSE	850
	TGNSTSNSTL EEVPTVDPVQ EKVAKFAESY GMKLENVLFN MDGTIELYLP	900
35	SGEVIKKNMA DFTGEAPQGN GENKPSENGK VSTGTVENQP TENKPADSLP	950
	EAPNEKPVKP ENSTDNGMLN PEGNVGSDPM LDPALEEAPA VDPVQEKLEK	1000
	FTASYGLGLD SVIFNMGTI ELRLPSGEVI KKNLSDFIA (SEQ ID NO: 6)	1039

FIGURE 6

40

	MKINKKYLGA SVATLVLSVC AYELGLHQAQ TVKENNRVSY IDGKQATQKT	50
	ENLTPDEVSK REGINAEQIV IKITDQGYVT SHGDHYHYHN GKVPYDAIIS	100
	EELLMKDPNY QLKDSDIVNE IKGGYVIKVN GKYYVYLKDA AHADNVRTKE	150
	EINRQKQEH QHREGGTSAN DGAVAFARSQ GRYTTDDGYI FNASDIIEDT	200
45	GDAYIVPHGD HYHYIPKNEI SASLAAAEA FLSGRENLSN LRTYRRQNSD	250

	NTPRTNWVPS VSNPGTTNTN TSNNSTNSQ ASQSNIDDSL LKQLYKLPLS	300
	QRHVESDGLI FDPAQITSRT ARGVAVPHGN HYHFIPYEQM SELEKRIARI	350
	IPLRYRSNHV VPDSRPEEPS PQPTPEPSPS PQPAPNPQPA PSNPIDEKLV	400
	KEAVRKVG DG YVFEENGVS R YIPAKNLSAE TAAGIDSKLA KQESLSHKL G	450
5	AKKTDLPSSD REFYNKAYDL LARIHQDLLD NKGRQVDFEA LDNLLERLKD	500
	VSSDKVKLV DILAFLAPIR HPERLGK PNA QITYTDDEIQ VAKLAGKYTT	550
	EDGYIFDPRD ITSDEGDAYV TPHMTHSHWI KKDSLSEAER AAAQAYAKEK	600
	GLTPPSTDHQ DSGNTEAKGA EAIYNRVKAA KKVPLDRMPY NLQYTVEVK N	650
	GSLIIPHYDH YHNIKFEWFD EGLYEAPKGY TLEDLLATVK YYVEHPNERP	700
10	HSDNGFGNAS DHVQRNKNQ ADTNQTEKPS EEKPQTEKPE EETPREEKPO	750
	SEKPESPKPT EEP EESPEE SEEPQVETEK VEEKLREAED LLGKIQDPII	800
	KSNAKETLTG LKNLLFGTQ DNNTIMAEAE KLLALLKESK (SEQ ID NO: 7)	840

FIGURE 7

15

	MKINKKYL AG SVAVLALSVC SYELGRHQAG QVKKESNRVS YIDGDQAGQK	50
	AENLTPDEVS KREGINAEQI VIKITDQGYV TSHGDHYHY NGKVPYDAII	100
	SEELLMKDPN YQLKSDIVN EIKGGYVIKV DGKYVYVLKD AAHADNIRTK	150
	BEIKRQKQEH SHNHN SRADN AVAAARAQGR YTTDDGYIFN ASDIIEDTGD	200
20	AYIVPHGDHY HYIPKNELSA SELAAAEAYW NGKQGSRPSS SSSYNANPVQ	250
	PRLSEHNH LT VTPTYHQNGQ ENISSLLREL YAKPLSERHV ESDGLIFDPA	300
	QITSRTARGV AVPHGNHYHF IPYEQMSELE KRIARIIPLR YRSNHWVPDS	350
	RPEQPS PQST PEPSPSLQPA PNPQPAPSNP IDEKLVKEAV RKVGDGYVFE	400
	ENGVSRYIPA KDL SAETAAG IDSKLAKQES LSHKLGAKKT DLPSSDREFY	450
25	NKAYDLLARI HQDLLDNKGR QVDFEVL DNL LERLKDVS SD KVKLVDDILA	500
	FLAPIRHPER LGKPN AQITY TDDEIQVAKL AGKYTTEDGY IFDPRDITSD	550
	EGDAYVTPHM THSHWIKKDS LSEAERAAAQ AYAKEKGLTP PSTDHQDSGN	600
	TEAKGAEAIY NRVKAAKKVP LDRMPYNLQY TVEVKNGSLI IPHYDHYHNI	650
	KFEWFDEGLY EAPKGY SLED LLATVKYYVE HPNERPHSDN GFGNASDHVR	700
30	KNKADQDSKP DEDKEHDEVS EPTHPESDEK ENHAGLNPSA DNLYKPSTDT	750
	EETEEEAEDT TDEAEIPQVE NSVINAKIAD AEALLEKVTD PSIRQAMET	800
	LTGLKSSLLL GTKDNNTISA EVDSLLALLK ESQPAPIQ	838

(SEQ ID NO : 8)

FIGURE 8

35

	TGTGCCTATG CACTAAACCA GCATCGTT CG CAGGAAAATA AGGACAATAA TCGTGTCTCT	60
	TATGTGGATG GCAGCCAGTC AAGTCAGAAA AGTGAAACT TGACACCAGA CCAGGTTAGC	120
	CAGAAAGAAG GAATTCAGGC TGAGCAAATT GTAATCAAAA TTACAGATCA GGGCTATGTA	180
40	ACGTCACACG GTGATCACTA TCATTACTAT AATGGGAAAG TTCCTTATGA TGCCCTCTTT	240
	AGTGAAGAAC TCTTGATGAA GGATCCAAAC TATCAACTTA AAGACGCTGA TATTGTCAAT	300
	GAAGTCAAGG GTGGTTATAT CATCAAGGTC GATGGAAAT ATTATGTCTA CCTGAAAGAT	360
	GCAGCTCATG CTGATAATGT TCGAACTAAA GATGAAATCA ATCGTCAAAA ACAAGAACAT	420
	GTCAAAGATA ATGAGAAGGT TAAC TCTAAT GTTGCTGTAG CAAGGTCTCA GGGACGATAT	480
45	ACGACAAATG ATGGTTATGT CTTTAATCCA GCTGATATTA TCGAAGATAC GGGTAATGCT	540

	TATATCGTTC CTCATGGAGG TCACTATCAC TACATTCCCA AAAGCGATTT ATCTGCTAGT	600
	GAATTAGCAG CAGCTAAAGC ACATCTGGCT GGAAAAATA TGCAACCGAG TCAGTTAAGC	660
	TATTCTTCAA CACCTTCTCC ATCTCTTCCA ATCAATCCAG GAACTTCACA TGAGAAACAT	720
	GAAGAAGATG GATACGGATT TGATGCTAAT CGTATTATCG CTGAAGATGA ATCAGGTTTT	780
5	GTCATGAGTC ACGGAGACCA CAATCATTAT TTCTTCAAGA AGGACTTGAC AGAAGAGCAA	840
	ATTAAGGCTG CGCAAAAACA TTTAGAGGAA GTTAAACTA GTCATAATGG ATTAGATTCT	900
	TTGTCATCTC ATGAACAGGA TTATCCAAGT AATGCCAAG AAATGAAAGA TTTAGATAAA	960
	AAAATCGAAG AAAAAATTGC TGGCATTATG AAACAATATG GTGTCAAACG TGAAAGTATT	1020
	GTCGTGAATA AAGAAAAAAA TGCGATTATT TATCCGCATG GAGATCACCA TCATGCAGAT	1080
10	CCGATTGATG AACATAAACC GGTGGAATT GGTCACTCTC ACAGTAACTA TGAAGTGT	1140
	AAACCCGAAG AAGGAGTTGC TAAAAAAGAA GGGATAAAG TTTATACTGG AGAAGAATTA	1200
	ACGAATGTTG TTAATTTGTT AAAAAATAGT ACGTTTAATA ATCAAACTT TACTCTAGCC	1260
	AATGGTCAA AACGCGTTTC TTTTAGTTTT CCGCCTGAAT TGGAGAAAAA ATTAGGTATC	1320
	AATATGCTAG TAAATTTAAT AACACCAGAT GGAAAAAGTAT TGGAGAAAGT ATCTGGTAAA	1380
15	GTATTTGGAG AAGGAGTAGG GAATATTGCA AACTTTGAAT TAGATCAACC TTATTTACCA	1440
	GGACAAACAT TTAAGTATAC TATCGCTTCA AAAGATTATC CAGAAGTAAG TTATGATGGT	1500
	ACATTTACAG TTCCAACCTC TTTAGCTTAC AAAATGGCCA GTCAAACGAT TTTCTATCCT	1560
	TTCCATGCAG GGGATACTTA TTTAAGAGTG AACCCTCAAT TTGCAGTGCC TAAAGGAAC	1620
	GATGCTTTAG TCAGAGTGTT TGATGAATTT CATGGAAATG CTTATTTAGA AAATACTAT	1680
20	AAAGTTGGTG AAATCAAATT ACCGATTCCG AAATTAAACC AAGGAACAAC CAGAACGGCC	1740
	GGAAATAAAA TTCCTGTAAC CTTTCATGGCA AATGCTTATT TGGACAATCA ATCGACTTAT	1800
	ATTGTGGAAG TACCTATCTT GGAAAAAGAA AATCAAACG ATAAACCAAG TATTCTACCA	1860
	CAATTTAAAA GGAATAAAGC ACAAGAAAAC TCAAACTTG ATGAAAAGGT AGAAGAACCA	1920
	AAGACTAGTG AGAAGGTAGA AAAAGAAAAA CTTTCTGAAA CTGGGAATAG TACTAGTAAT	1980
25	TCAACGTTAG AAGAAGTTCC TACAGTGGAT CCTGTACAAG AAAAAGTAGC AAAATTTGCT	2040
	GAAAGTTATG GGATGAAGCT AGAAAATGTC TTGTTTAATA TGGACGGAAC AATTGAATTA	2100
	TATTTACCAT CGGGAGAAGT CATTAATAAG AATATGGCAG ATTTTACAGG AGAAGCACCT	2160
	CAAGGAAATG GTGAAAATAA ACCATCTGAA AATGGAAAAG TATCTACTGG AACAGTTGAG	2220
	AACCAACCAA CAGAAAATAA ACCAGCAGAT TCTTTACCAG AGGCACCAA CGAAAAACCT	2280
30	GTAACACCAG AAAACTCAAC GGATAATGGA ATGTTGAATC CAGAAGGGAA TGTGGGGAGT	2340
	GACCCATATG TAGATTCAGC ATTAGAGGAA GCTCCAGCAG TAGATCCTGT ACAAGAAAAA	2400
	TTAGAAAAAT TTACAGCTAG TTACGGATTA GGCTTAGATA GTGTTATATT CAATATGGAT	2460
	GGAACGATTG AATTAAGATT GCCAAGTGGA GAAGTGATAA AAAAGAATTT ATTGATCTCA	2520
	TAGCGTAA (SEQ ID NO : 9)	2528
35	FIGURE 9	

	CAYALNQHRS QENKDNRRVS YVDGSQSSQK SENLTPDQVS QKEGIQAEQI	50
	VIKITDQGYV TSHGDHYHY NGKVPYDALF SEELLMKDPN YQLKDADIVN	100
40	EVKGGYIIKV DGKYYVYLKD AAHADNVRTK DEINRQKQEH VKDNEKVNSN	150
	VAVARSQGRY TTNDGYVFPN ADIIEDTGNA YIVPHGGHYH YIPKSDLSAS	200
	ELAAAKAHLA GKNMQPSQLS YSSTPSPSLP INPGTSHEKH EEDGYGFDAN	250
	RIIAEDES GF VMSHGDHNNHY FFKKDLTEEQ IKAQKHLEE VKTSHNGLDS	300
	LSSHEQDYP NAKEMKDLK KIEEKIAGIM KQYGVKRESI VVNKEKNAIL	350
45	YPHGDHMHAD PIDEHKPVG I GHSHSNYELF KPEEGVAKKE GNKVYTGEEL	400

TNVVNLLKNS	TFNNQNFTLA	NGQKRVSPSP	PPELEKKLGI	NMLVKLITPD	450
GKMLEKVS	GK VFGGEGVGNIA	NFELDQPYLP	GQTFKYTIAŠ	KDYPEVSYDG	500
TFTVPTSLAY	KMASQTIFYP	FHAGDTYLRV	NPQFAVPKGT	DALVRVFDEF	550
HGNAYLENNY	KVGEIKLPIP	KLNQGTTRTA	GNKIPVTFMA	NAYLDNQSTY	600
IVEVPILEKE	NQTDKPSILP	QFKRNKAQEN	SKLDEKVEEP	KTSEKVEKEK	650
LSETGNSTSN	STLEEVPTVD	FVQEKVAKFA	ESYGMKLENV	LFNMDGTIEL	700
YLPSGEVIKK	NMADFTGEAP	QNGENKPSSE	NGKVSTGTVE	NQPTENKPAD	750
SLPEAPNEKP	VKPENSTDNG	MLNPEGNVGS	DPMLDSALEE	APAVDFVQEK	800
LEKFTASYGL	GLDSVIFNMD	GTIELRLPSG	EVIKKNLLIS		840

(SEQ ID NO : 10)

FIGURE 10

DQGYVTSHGD HYHYNGKVP YDALFSEELL MKDPNYQLKD ADIVNEVKGG YIIKVDGKYY
VYLKDAAHAD NVRTKDEINR QKQEHVKDNE KVNS

(SEQ ID NO: 11)

FIGURE 11

GIQAEQIVIK ITDQGYVTSH GDHYHYNGK VPDALFSEE LL

(SEQ ID NO: 12)

FIGURE 12

TAYIVRHGDH FHYIPKSNQI GQPTLPNNSL ATPSPSLPI

(SEQ ID NO: 13)

FIGURE 13

TSNSTLEEVPTVDPVQEKVA KFAESYGMKL ENVLFN

(SEQ ID NO: 14)

FIGURE 14

MDGTIELRLP SGEVIKKNLS DFIA

(SEQ ID NO: 15)

FIGURE 15

YGLGLDSVIF NMDGTIELRL PSGEVIKKNL SDFIA

(SEQ ID NO: 16)

FIGURE 16

PALEEAPAVD PVQEKLEKFT ASYGLGLDSV IFNMDGTIEL RLPSGEVIKK NLSDFIA

(SEQ ID NO: 17)

FIGURE 17

KVEEPTSEK VEKEKLSETG NSTSNSTLEE VPTVDPVQEK

(SEQ ID NO: 18)

FIGURE 18

5

MKDLDKKIEE KIAGIMQYG VKRESIVVNK EKNAIYPHG DHHHADPIDE HKPVGIGHSH
SNYELFKPEE GVAKKEGN

(SEQ ID NO: 19)

FIGURE 19

10

AIYPHGDHH HADPIDEHKP VGIGHSHSNY ELFKPEGVA KKEGNKVYTG E

(SEQ ID NO: 20)

FIGURE 20

15

IQVAKLAGKY TTEDGYIFDP RDITSDEGD

(SEQ ID NO: 21)

FIGURE 21

DHQDSGNTA KGAETIYNRV KAAKVPDR MPYNLQYTV VKNGSLIIPH YDHYHNIKFE
WFDEGLYEAP KGYSLEDLLA TVKYYV

(SEQ ID NO: 22)

FIGURE 22

GLYEAPKGYS LEDLLATVKY YVEHPNERPH SDNGFGNASD H

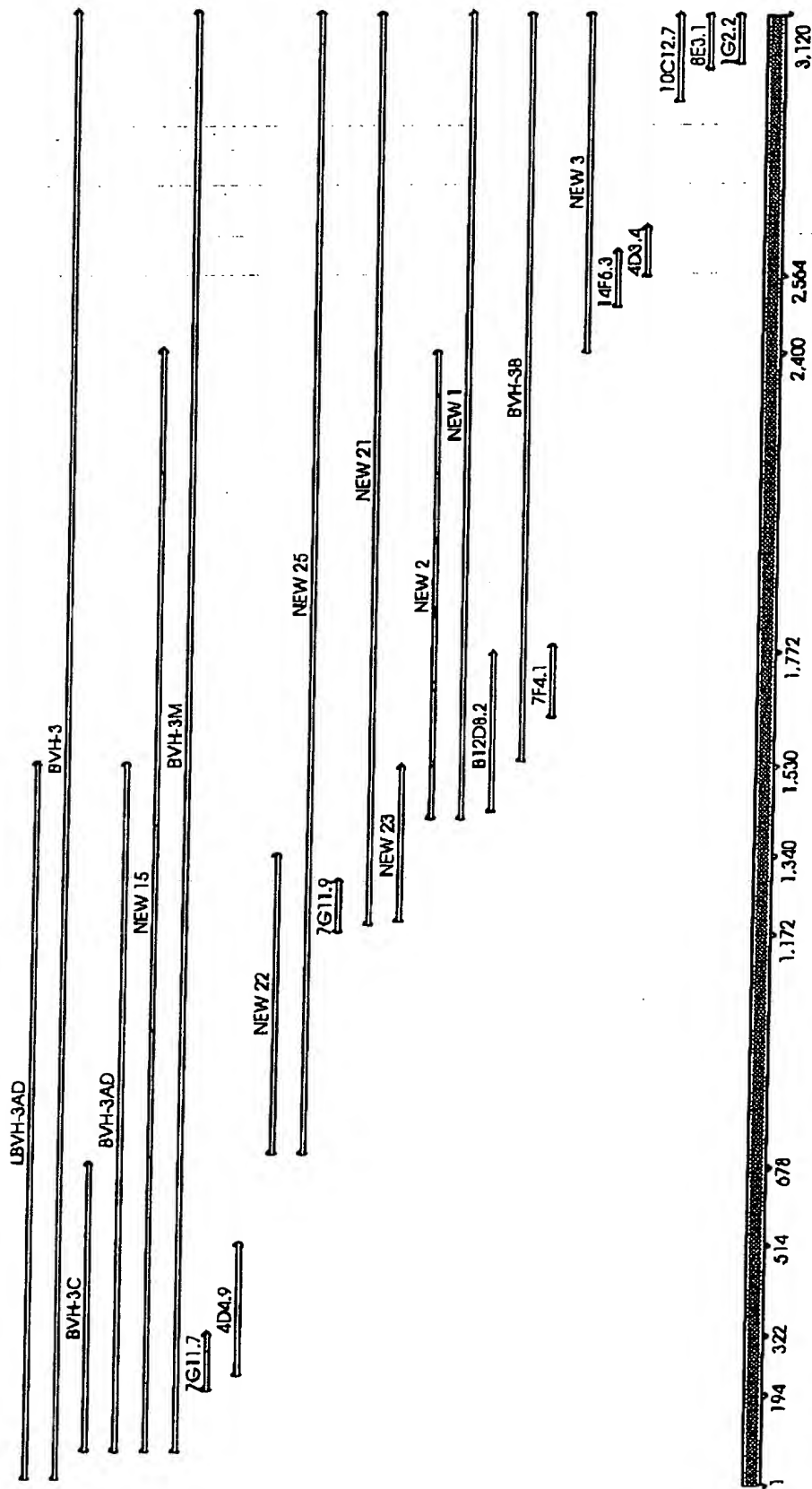
(SEQ ID NO: 23)

FIGURE 23

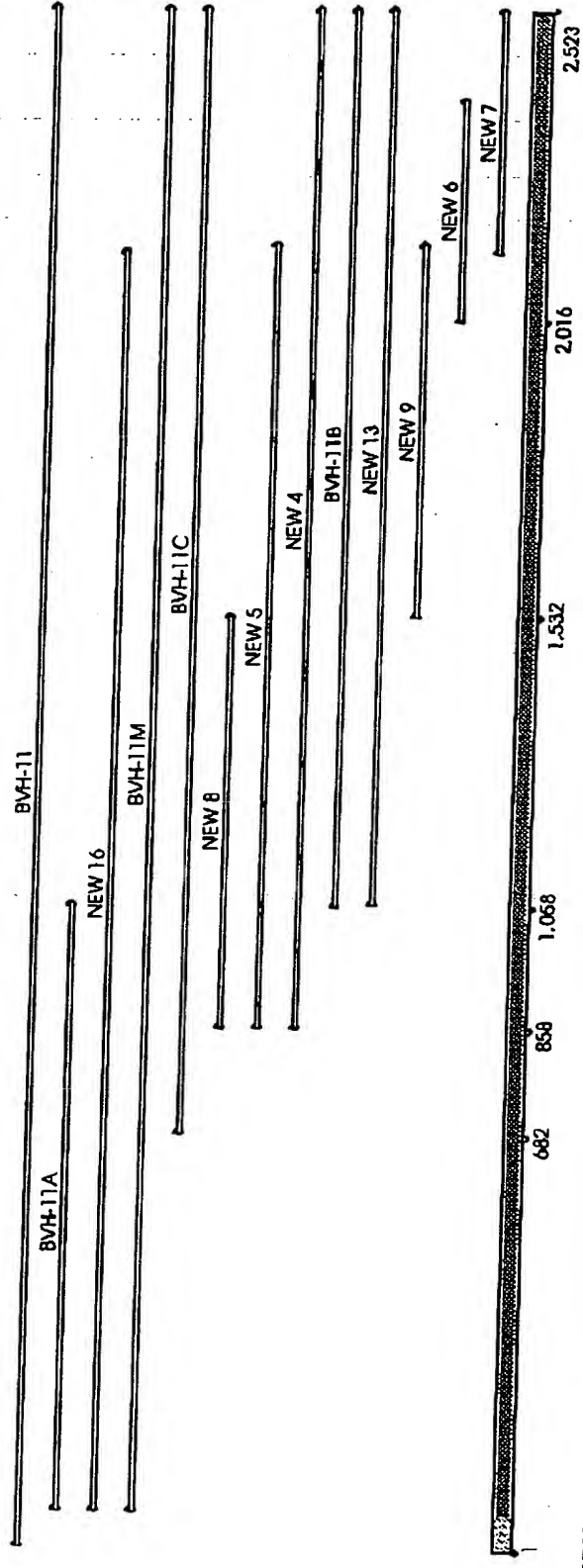
GLYEAPKGYSLEDLLATVKYYV

(SEQ ID NO: 163)

Figure 24

[illegible]

5 **FIGURE 25**



5 FIGURE 26

Epitope Localization on BVH-3 Protein

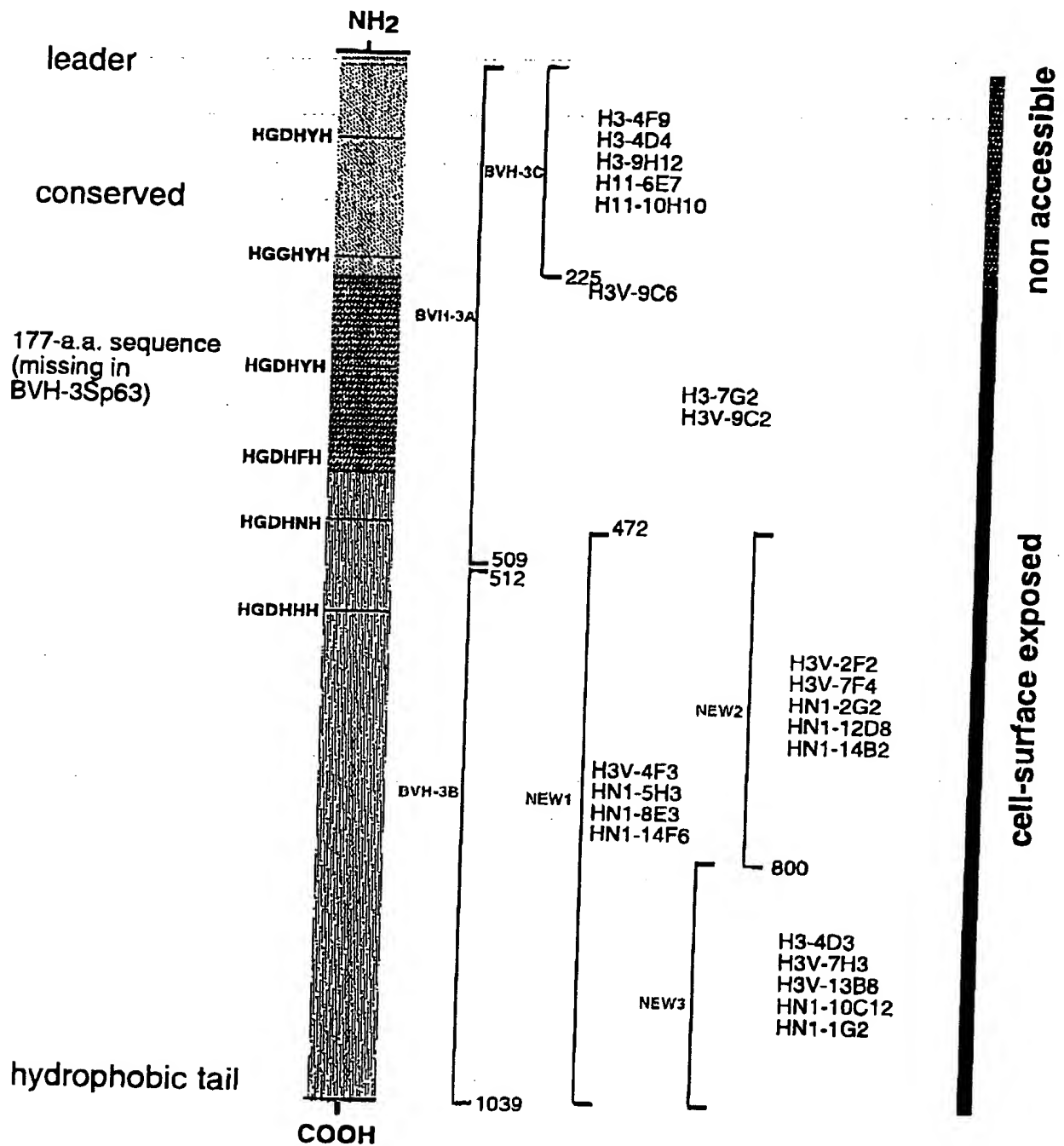
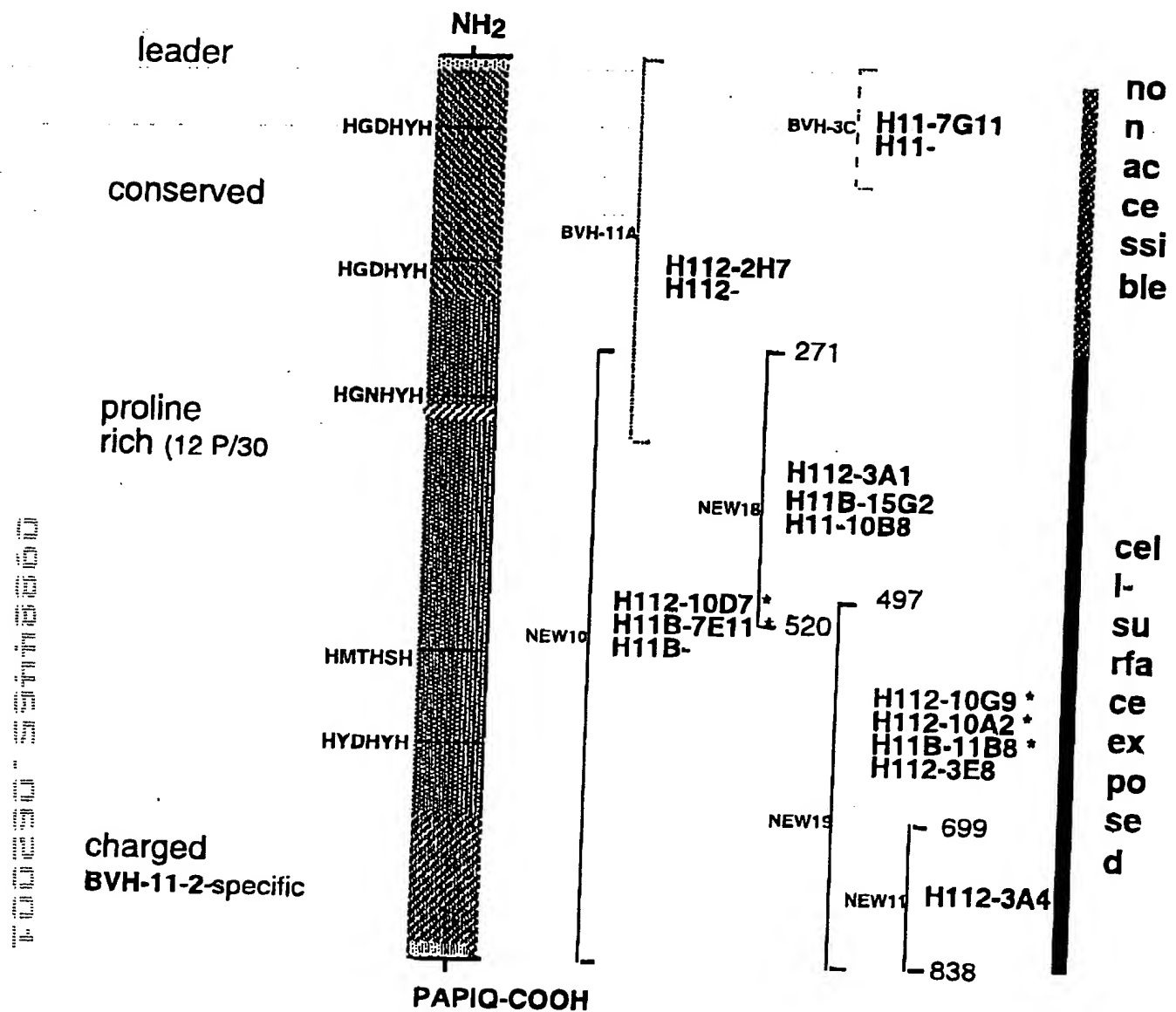


FIGURE 28

Epitope Localization on BVH-11-2 Prot in



* Surface-exposed and protection-conferring Mabs

FIGURE 29

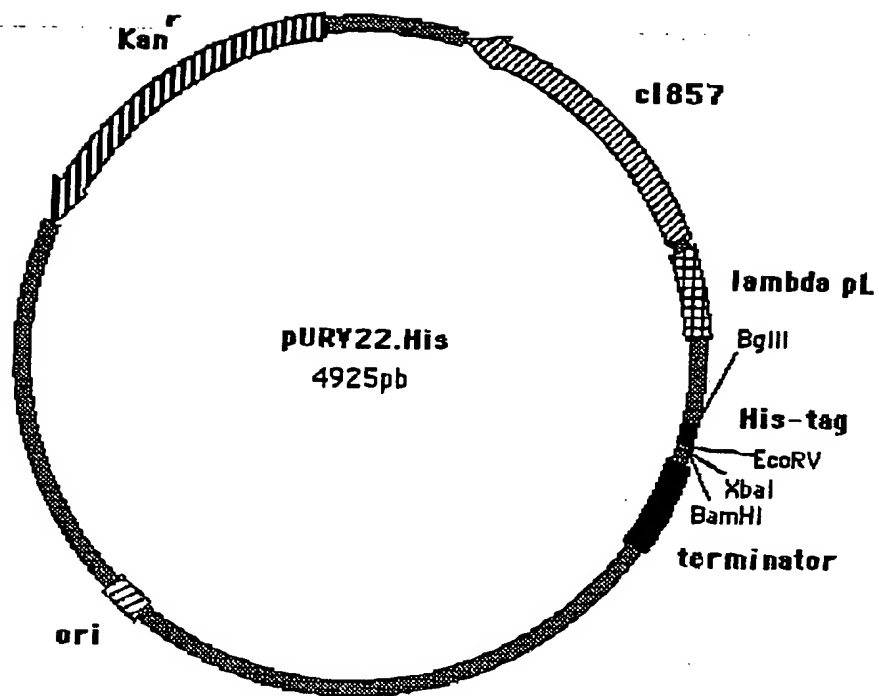


FIGURE 30

	BVH-3M	1	CAYALNQHRSQENKDNNRVS YVDGSQSSQKSENLT PDQVSQKEGIQAEQIVIKITDQGYV	60
5	BVH3-63	1	CAYALNQHRSQENKDNNRVS YVDGSQSSQKSENLT PDQVSQKEGIQAEQIVIKITDQGYV	60

	BVH-3M	61	TSHGDHYHYNGKVPYDALFSEELLMKDPNYQLKDADIVNEVKGGYIIKVDGKYVYVLKD	120
10	BVH3-63	61	TSHGDHYHYNGKVPYDALFSEELLMKDPNYQLKDADIVNEVKGGYIIKVDGKYVYVLKD	120

	BVH-3M	121	AAHADNVRTKDEINRQKQEHVKDNEKVNSNVAVARSQGRYTTNDGYVFNPAIIEDTGNA	180
	BVH3-63	121	AAHADNVRTKDEINRQKQEHVKDNEKVNSNVAVARSQGRYTTNDGYVFNPAIIEDTGNA	180

15				
	BVH-3M	181	YIVPHGGHYHYIPKSDLSASELAAAKAHLAGKNMQPSQLSYSSSTASDNNTQSVAKGSTSK	240
	BVH3-63	181	YIVPHGGHYHYIPKSDLSASELAAAKAHLAGKNMQPSQLSYSS-----	223

20				
	BVH-3M	241	PANKSENLSLLKELYDSPSAQRYSES DGLVFDPAKII SRTPNGVAIPHGDHYHFIPYSK	300
	BVH3-63	224	-----	223
25				
	BVH-3M	301	LSALEEKIARMVPISGTGSTVSTNAKPNEVVSSLGSLSSNPSSLTTSKELSSASDGYIFN	360
	BVH3-63	224	-----	223
30				
	BVH-3M	361	PKDIVEETATAYIVRHGDHFHYIPKSNQIGQPTLPNNSLATPSPSLPINPGTSHEKHEED	420
	BVH3-63	224	-----TPSPSLPINPGTSHEKHEED	243

	BVH-3M	421	GYGFDANRIIAEDES GFVMSHGDHNHYFFKKDLTEEQIKAAQKHLEEVKTSHNGLDSLSS	480
	BVH3-63	244	GYGFDANRIIAEDES GFVMSHGDHNHYFFKKDLTEEQIKAAQKHLEEVKTSHNGLDSLSS	303

35				
	BVH-3M	481	HEQDYPGNAKEMKDLDKKIEEKIAGIMKQYGVKRESIVVNKEKNAIIPHGDDHHADPID	540
	BVH3-63	304	HEQDYPSNAKEMKDLDKKIEEKIAGIMKQYGVKRESIVVNKEKNAIIPHGDDHHADPID	363

40				
	BVH-3M	541	EHKPVGIGHSHSNYELFKPEEGVAKKEGNKVYTGEELTNVNVNLLKNSTFNNQNFTLANGQ	600
	BVH3-63	364	EHKPVGIGHSHSNYELFKPEEGVAKKEGNKVYTGEELTNVNVNLLKNSTFNNQNFTLANGQ	423

45				
	BVH-3M	601	KRVSFSPFPELEKKLGINMLVKLITPDGKVLEKVS GKVFGEGVGNIANFELDQPYLPGQT	660
	BVH3-63	424	KRVSFSPFPELEKKLGINMLVKLITPDGKVLEKVS GKVFGEGVGNIANFELDQPYLPGQT	483

BVH-3M 661 FKYTIASKDYPEVSYDGTFTVPTSLAYKMASQTIIFYPFHAGDTYLRVNPQFAVPKGTDAL 720
BVH3-63 484 FKYTIASKDYPEVSYDGTFTVPTSLAYKMASQTIIFYPFHAGDTYLRVNPQFAVPKGTDAL 543

BVH-3M 721 VRVFDEFHGNAYLENNYKVGEIKLPIPKLNQGTTRTAGNKIPVTFMANAYLDNQSTYIVE 780
BVH3-63 544 VRVFDEFHGNAYLENNYKVGEIKLPIPKLNQGTTRTAGNKIPVTFMANAYLDNQSTYIVE 603

BVH-3M 781 VPILEKENQTDKPSILPQFKRKAQENSKLDEKVEEPKTSEKVEKEKLSETGNSTSNSTL 840
BVH3-63 604 VPILEKENQTDKPSILPQFKRKAQENSKLDEKVEEPKTSEKVEKEKLSETGNSTSNSTL 663

BVH-3M 841 EEVPTVDPVQEKVAKFAESYGMKLENVLFNMDGTIELYLPSEGEVIKKNMADFTGEAPQGN 900
BVH3-63 664 EEVPTVDPVQEKVAKFAESYGMKLENVLFNMDGTIELYLPSEGEVIKKNMADFTGEAPQGN 723

BVH-3M 901 GENKPSENGKVSTGTVENQPTENKPADSLPEAPNEKPVKPENSTDNGMLNPEGNVGSDPM 960
BVH3-63 724 GENKPSENGKVSTGTVENQPTENKPADSLPEAPNEKPVKPENSTDNGMLNPEGNVGSDPM 783

BVH-3M 961 LDPAL EEAPAVDPVQEKLEKFTASYGLGLDSVIFNMDGTIELRLPSGEVIKKNLSDFIA 1019
BVH3-63 784 LDSAL EEAPAVDPVQEKLEKFTASYGLGLDSVIFNMDGTIELRLPSGEVIKKNLLIS 840
** *****

FIGURE 31

BVH-3 1 MKFSSKKYIAAGSAVIVSLSLCAYALNQHRSQENK-DNNRVSYVDGSQSSQKSENLTDPQV 59
BVH-11 1 MKINKKYL AG-SVATLVLSVCAYELGLHQAQTVK-ENNRVSYIDGKQATQKTENLTPDEV 58
BVH-11-2 1 MKINKKYL AG-SVAVLALSVC SYELGRHQAGQVKESNRVSYIDGQAGQKAENLTPDEV 59
** * * * . * * . * * . * . * * * * * . * * . * * * * *

BVH-3 60 SQKEGIQAEQIVIKITDQGYVTSBGDHYHYNGKVPYDALFSEELLMKDPNYQLKDADIV 119
BVH-11 59 SKREGINAEQIVIKITDQGYVTSBGDHYHYNGKVPYDAI ISEELLMKDPNYQLKDS DIV 118
BVH-11-2 60 SKREGINAEQIVIKITDQGYVTSBGDHYHYNGKVPYDAI ISEELLMKDPNYQLKDS DIV 119
* . * * . *

BVH-3 120 NEVKGGYIIKVDGKYYVYLKDAAHADNVRTKDEINRQKQEHVKDNE----KVNSNVAVAR 175
BVH-11 119 NEIKGGYVIKVNKGKYYVYLKDAAHADNVRTKEEINRQKQEHSHREGGTSANDGAVAFAR 178
BVH-11-2 120 NEIKGGYVIKVDGKYYVYLKDAAHADNIRTKEEIKRQKQEHSHNHN---SRADNAVAAR 176
* . * * * . *

	BVH-3	176	SQGRYTTNDGYVFNPAIIEDTGNAYIVPHGGHYHYIPKSDLSASELAAAKAHLAGKNMQ	235
	BVH-11	179	SQGRYTTDDGYIFNASDIIEDTGDAYIVPHGDHYHYIPKNELSASELAAAEAFLSGRENL	238
5	BVH-11-2	177	AQGRYTTDDGYIFNASDIIEDTGDAYIVPHGDHYHYIPKNELSASELAAAEAYWNGKQ--	234
			***** **.*.***** ***** ***** .***** *	
	BVH-3	236	PSQLSYSSTASDNNTQSVAKGSTSKP-----A-N-----KSENLOSLKELYDSP	279
	BVH-11	239	SNLRTYRRQNSDNTFRTNWVPSVSNPGTTNTNTSNNSNTNSQASQSNIDISLLKQLYKLP	298
10	BVH-11-2	235	-GSRPSSSSSYNANPVQPRLSENHNLTVPTTYHQN-----QGENISSLLRELYAKP	284
			****.*** *	
	BVH-3	280	SAQRYSESDGLVFDPAKIIISRTPNGVAIPHGDHYHFIPYSKLSALEEKIARMVPISGTGS	339
	BVH-11	299	LSQRHVESDGLIFDPAQITSRTARGVAVPHGNHYHFIPYEQMSELEKRIARIIPLYRSN	358
15	BVH-11-2	285	LSERHVESDGLIFDPAQITSRTARGVAVPHGNHYHFIPYEQMSELEKRIARIIPLYRSN	344
			..* *****.****.* *** **.*.*** ***** ..* ** .***..*	
	BVH-3	340	TVSTNAKPNEVVSSLGSLSSNPSSLTTSKELSSASDGYIFNPKDIVEETATAYIVRHGDH	399
	BVH-11	359	HWVPDSRP-EEPSQPQTPEPSPS-PQPAPNPQPAPS----NP--IDEKLVKEAVRKVGDG	410
20	BVH-11-2	345	HWVPDSRP-EQSPSQSTPEPSPS-LQPAPNPQPAPS----NP--IDEKLVKEAVRKVGDG	396
			..* * ****** * ***	
	BVH-3	400	FHYIPKSNQIQOPTLPNNSLATPSPSLPINPGTSHEKHEEDGYGFDANRIIAEDES GFVM	459
	BVH-11	411	YVFEE-----NGVSRYIP-----AKNLSAETAAGIDSKLAKQESLS----	446
25	BVH-11-2	397	YVFEE-----NGVSRYIP-----AKDLSAETAAGIDSKLAKQESLS----	432
		*** * **	
	BVH-3	460	SHGDHNHYFFKKDLTEEQIKAAQKHLEEVKTSHNGLDSLSSHEQDYPGNAKEMKDLDDKKI	519
	BVH-11	447	----HKLGAKKTDLPSSDREFYNKAYDLLARIHQDLLDNKGRQVDFEALDNLLERLKDVS	502
30	BVH-11-2	433	----HKLGAKKTDLPSSDREFYNKAYDLLARIHQDLLDNKGRQVDFEVLNLLERLKDVS	488
			* * * *****	
	BVH-3	520	EEKIAGIMKQYGVKRESIVVNKEKNAIYPHGDHHHADPIDEHKPVGIGHSHSNYELFKP	579
	BVH-11	503	SDKVKLVDDILAF LAP--IRHPER--LGKPNAQITYTDDEIQVAKLAGKYTTEDGYIFDP	558
35	BVH-11-2	489	SDKVKLVDDILAF LAP--IRHPER--LGKPNAQITYTDDEIQVAKLAGKYTTEDGYIFDP	544
			..***** * *	
	BVH-3	580	EEGVAKKEGNKVYTGEELTNVVNLLKNSTFNNQNFTLANGQKRVSFSFPPELEKKLGINM	639
	BVH-11	559	RD-ITSDEGD-AYVTPHMTSHSHWIKKDS-LSEAERAAQAYAKEKGLTPPSTDHQB----	611
40	BVH-11-2	545	RD-ITSDEGD-AYVTPHMTSHSHWIKKDS-LSEAERAAQAYAKEKGLTPPSTDHQB----	597
		** *****	
	BVH-3	640	LVKLITPDGKVLKESGKVFEGVGNIANFELDQPYLPGQTFKYTIASKDYPEVSYDGTG	699
	BVH-11	612	-----SGNTEAKGAEAIYNRVKAACKVPLDRMPYNLQ---YTVEVKNGSL	653
45	BVH-11-2	598	-----SGNTEAKGAEAIYNRVKAACKVPLDRMPYNLQ---YTVEVKNGSL	639
			** * * ****	

	BVH-3	700	TVPTSLAYKMASQTI FYPPFHAGDTYLRVN PQFAVPKGT DALVRVFDEFHG NAYLENNYKV	759
	BVH-11	654	IIP---HYDHYHNIKFEWFDEG-----LYEAPKG-----YTLEDLLAT	688
	BVH-11-2	640	IIP---HYDHYHNIKFEWFDEG-----LYEAPKG-----YSLEDLLAT	674
5			* * * * *	
			***	**
	BVH-3	760	GEIKLPIPKLNQGTTRTAGNKIPVTFMANAYLDNQSTYIVEVPILEKENQTDKPSILPQF	819
10	BVH-11	689	VKYYVEHPNERPHSDNGFGN-----ASDHVQRN-----KNGQADTN-----	724
	BVH-11-2	675	VKYYVEHPNERPHSDNGFGN-----ASDHVRKN-----KADQDSKP-----	710
			* * * * *	
	BVH-3	820	KRNKAQENSKLDEKVEEPKTSEKVEKEKLSETGNSTSNSTLEEVP TVDPVQEKVAKFAES	879
15	BVH-11	725	-----QTEKPSEEKPQTEKPE---EE-----	742
	BVH-11-2	711	-----DEDKEHDEVSEPTHPESDEKE-----	731
			* * *	
	BVH-3	880	YGMKLE NVLFNMDGTIELYLP SGEVIKKNMADFTGEAPQNGENKPSENGKVSTGTVENQ	939
20	BVH-11	743	-----TPREEKPQSE---KPES-----PK	758
	BVH-11-2	732	-----NHAGLNPSADNLYKPSTD-----TE	751
			* **	
	BVH-3	940	PTENKPADSLPEAPNEKPVKPENSTDNGMLNPEGNVGSDPMLDPALEEAPAVDPVQEKLE	999
25	BVH-11	759	PTEEP EESPEES--EEPQVETEKVEEKLREAE DLLGK--IQDPIIKSN-----AKETLT	809
	BVH-11-2	752	ETEEEAEDTTDEA--EIPQVENS VINAKIADAEALLEK--VTDPSIRON-----AMETLT	802
			** .. * * * * *	
	BVH-3	1000	KFTASYGLGLDSVIFNMDGTIELRLPSGEVIKKNLSDFIA	1039
30	BVH-11	810	GLKNNLLFGTQ-----DNNTIMAEAEKLLALLKESK	840
	BVH-11-2	803	GLKSSLLLGTK-----DNNTISAEVDSLLALLKESQPAPIQ	838
			* **	

35 FIGURE 32

1 ATGCAAATTA CCTACACTGA TGATGAGATT CAGGTAGCCA AGTTGGCAGG CAAGTACACA
 61 ACAGAAGACG GTTATATCTT TGATACTAGT TGGATTAAAA AAGATAGTTT GTCTGAAGCT
 121 GAGAGAGCGG CAGCCCAGGC TTATGCTAAA GAGAAAGGTT TGACCCCTCC TTCGACAGAC
 181 CACCAGGATT CAGGAAATAC TGAGGCAAAA GGAGCAGAAG CTATCTACAA CCGCGTGAAA
 241 GCAGCTAAGA AGGTGCCACT TGATCGTATG CCTTACAATC TTCAGTATAC TGTAGAAGTC
 301 AAAAACGGTA GTTTAATCAT ACCTCATTAT GACCATTACC ATAACATCAA ATTTGAGTGG
 361 TTTGACGAAG GCCTTTATGA GGCACCTAAG GGGTATAGTC TTGAGGATCT TTTGGCGACT
 421 GTCAAGTACT ATGTCGAACC GCGGAACGCT AGTGACCATG TTCGTAAAAA TAAGGCAGAC
 481 CAAGATAGTA AACCTGATGA AGATAAGGAA CATGATGAAG TAAGTGAGCC AACTCACCTC
 541 GAATCTGATG AAAAAGAGAA TCACGCTGCT TTAATCCTT CAGCAGATAA TCTTTATAAA
 601 CCAAGCACTG ATACGGAAGA GACAGAGGAA GAAGCTGAAG ATACCACAGA TGAGGCTGAA
 661 ATTCTGGTA CCCCTAGTAT TAGACAAAT GCTATGGAGA CATTGACTGG TCTAAAAAGT
 721 AGTCTTCTTC TCGGAACGAA AGATAATAAC ACTATTTTAC CAGAAGTAGA TAGTCTCTTG
 781 GCTTTGTTAA AAGAAAGTCA ACCGGCTCCT ATACAGTAG (SEQ ID NO: 257)

FIGURE 33

1 MQITYTDDEI QVAKLAGKYT TEDGYIFDTS WIKKDSLSEA ERAAAQAYAK EKGLTPPSTD
 61 HQDSGNTEAK GAEATYNRVK AAKKVPLDRM PYNLQYTV EV KNGSLIIPHY DHYHNIKFEW
 121 FDEGLYEAPK GYSLEDLLAT VKYYVEPRNA SDHVRKNKAD QDSKPDEDKE HDEVSEPTHP
 181 ESDEKENHAG LNPSADNLYK PSTDTEETEE EAEDTTDEAE IPGTPSIRQN AMETLTGLKS
 241 SLLLGTKDNN TISAEVDSLL ALLKESQPAP IQ (SEQ ID NO : 258)

FIGURE 34